Regenerative treatment of degreasing baths through Microfiltration
Setup and functioning method

The micro-filtration systems produced by us are used primarily with the objective of the regenerative preparation of cleaning baths.

For the establishment of micro-filtration technology, we differentiate between the following equipment versions:

**Main component micro-filtration systems**
- Modules with individual adaptation possibility to customer-specific conditions
- Pump systems consisting of FEED pumps and supply pumps
- Buffer container as working containers for the filtration process
- Process control system on the basis of the most updated technologies

**Filtration process-control system**
- Determination of permeate volume flows, conductivity and temperature

**Remote process-control system**
- Guarantee of preventive maintenance and upkeep services

**Automatic MF-filter cleaning system**
- with linked up module cleaning tank

**Process visualization on the MF-system**
- immediately identifiable information about system states on site
Setup and functioning method

Schematic setup of a filtration system for degreasing baths, including online-monitoring and visualization.

The potential of a membrane filtration system and the filtration characteristics, in combination with the degreasing agent used, is an extremely complex subject. In order to be able to give the customer the best recommendation, the following procedural method is employed:

**Process-Accompanying Measures**

In order to make statements about the performance of a filtration system and the characteristics of a degreasing bath, a practice-oriented procedure is recommended.

The potential of a membrane filtration system and the filtration characteristics, in combination with the degreasing agent used, is an extremely complex subject. In order to be able to give the customer the best recommendation, the following procedural method is employed:

**Stage 1**
Verification and coordination of the degreasing agent to be possibly used, with reference to the membrane compatibility

**Stage 2**
Test of the elimination characteristics of the tensides on different membrane materials / geometry and pore widths

**Stage 3**
Extraction of representative bath samples from the degreasing process, for the determination of the elimination capability of the bath soiling

**Stage 4**
Test system filtration experiment on site, subject to observation of already existing regenerative process elements and conditions

**Stage 5**
Cost-benefit analysis and assessment of the filtration experiments. Generation of a report with recommendations for the project
Regenerative preparation in practice

The following practical example illustrates which economizing potentials can be achieved with the operation of a filtration system for regenerative preparation.

The following main soiling components are entered continuously in the degreasing bath:

- According to cold-rolling process, three different rolling oil types (mineral hydrocarbon, EP additive, corrosion protection and antioxidation agent, wear inhibitors)

- Metal abrasion and very fine metal dust as a result of the rolling process

- Paper, as a separating layer after the rolling

Key data of the MF system

Bath circulation capacity: 8000 liters per day

Permeate capacity: 600 liters per hour

Filtration capacity VBF: 1500 liters per hour
Savings and advantages of micro-filtration

After the establishment of microfiltration technology in the operational process, our customer could economize considerably on resources.

Saving of waste disposal costs by 92% - In comparison with the costs which accrued previously through the waste disposal using an emulsion fission system and including the costs which result from the concentration-increase of the micro-filtration preparation.

Reduction of cleaner consumption by 60% - The remaining 40% resulted from entrainment losses and losses which result regeneration-related.

Material saving of 10% - As a result of the ending of irreparable damages in the area of the oil separation and addition of coalizing-plate separator packages with metal particles and paper.

Reduction of the energy costs by approx. 60 KWh/m³

Reduction of the hydrocarbon contamination in the pre-greasing

Lowering of the average oil content from 1500 to 400 ppm

Increase of the process stability by 82% - By reducing the furnace-fire-related shutdowns.

Service and service-provision offers

We accompany your projects, not only during the conception and application phase, but, over and above this, according to your wishes and requirements.

A small selection of the process-accompanying possibilities are:

**Solid matter / Surface investigation**
- Paint compatibility
- Electron spectroscopy/raster electron-microscopy
- Test of the corrosion-protection capability

**Waste water / Environmental analysis**
- Waste-water investigations
- Determination of the chemical oxygen consumption
- Toxin analysis
- Metal analysis

**Process-oriented bath analysis**
- Alkalinity/Conductivity determination
- Surface tension measurement
- Fingerprint analysis
- Determination of the bath loading

**Sampling support**
- Automatic sample devices, including operational startup for representative samples
- Collection service for bath samples - also express service in case of urgent analyses
- Comprehensive analysis reports with result-oriented recommendations

Do you have any questions and do you require a product consultation?

Our sales team and our chemistry-technical consultation service are glad to remain available to you.

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